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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
	10/762,022	ROY, ANINDYA
Office Action Summary	Examiner	Art Unit	
	JUVENA LOO	2416	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _12 May 2009_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) _16 and 21_ is/are allowed.

6)☒ Claim(s) _6-12,15,17,19-20, and 22_ is/are rejected.

7)☒ Claim(s) _18_ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2.   Claims 6, 10, 15, 17, 19 – 20, and 22 are rejected under 35 U.S.C. 103(a) as

being unpatentable over Shirai et al. (5,912,877) in view of Hu et al. (US 2003/0016808

A1).

Regarding claim 6, *a method for performing congestion control in a node in a*

connection-oriented packet-switching network (Shirai: see Figure 3 and "The present

invention relates…congestion occurrence time" in Abstract), *the method comprising*:

determining that there is an indication of traffic congestion in a first path

connecting a source node and a destination node for a communication session (Shirai:

see Figure 22 and "(i) Process in which…when a frame discard is detected" in column

22, line 49 through column 23, line 39 – transmitting node 17a detects congestion

condition in the transit trunk and report congestion status to terminal 11a), *wherein the*

first path is a non-real time connection with an available cell rate of R_{ACR} (Shirai: see

Figure 19 and "(b) CIR value variable...terminal trunk 12 can be effectively used" in

column 21, line 31 through column 22, line 48; see also "The CIR (Committed

Information Rate)...guarantees at its normal time" in column 14, lines 7 – 9);

    the source node ascertaining whether M alternative paths exist with available

resources able to satisfy the R_{ACR} for transferring traffic between the source node and

the destination node, wherein M is equal to or greater than 1 (Shirai: see Figure 6 and

"(d) Alternate transfer process to backup...detoured to the backup transit trunk 14" in

column 15, line 46 through column 16, line 31; see also Figure 14 and "(f2) Second

mode in which stepwise alternate...via the backup transit trunk 14b" in column 19, line

46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer

process...to the backup transit trunk 14" in column 24, line 3 through column 25, line

15); *and*

    the source node selecting one of the M alternative paths to reroute the traffic

between the source node and the destination node if the M alternative paths exist, the

selected one of the M alternative paths replacing the first path (Shirai: see Figure 6 and

"(d) Alternate transfer process to backup...detoured to the backup transit trunk 14" in

column 15, line 46 through column 16, line 31; see also Figure 14 and "(f2) Second

mode in which stepwise alternate...via the backup transit trunk 14b" in column 19, line

46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer

process...to the backup transit trunk 14" in column 24, line 3 through column 25, line

15).

However, Shirai does not explicitly disclose the feature comprising:

the selected one of the M alternative paths replacing the first path for a

remainder of the communication session.

Hu discloses the use of dynamic adaptation to release congestion in a

connection-oriented network comprising the feature:

the selected one of the M alternative paths replacing the first path for a

remainder of the communication session (Hu: see Figure 5 and "While the adaptation

level...original path is discontinued" in page 3, sections 0031-0032).

It would have been obvious to one of the ordinary skill in the art at the time of the

invention to modify the system of Shirai by using the features, as taught by Hu et al., in

order to target misbehaved connections first so that network congestion may be

efficiently alleviated without affecting other well-behaved connections (Hu: see page 1,

section 0006).

Regarding claim 10, *wherein selecting one of the M alternative paths to reroute*

the traffic, comprises selecting a first one of the M alternative paths found to satisfy the

R_{ACR}, if there is more than one of the M alternative paths (Shirai: see Figure 14 and "(f2)
Second mode in which stepwise alternate...via the backup transit trunk 14b" in column
19, line 46 through column 20, line 8).

Regarding claim 15, *one or more computer-readable media having stored
thereon computer executable instructions that, when executed by one or more
processors, causes the* <u>*one or more processors*</u> *to:*

determine <u>*that there is an indication*</u> *of traffic congestion in a first path connecting
a source node and a destination node* <u>*for a communication*</u> *session* (Shirai: see Figure
22 and "(i) Process in which...when a frame discard is detected" in column 22, line 49
through column 23, line 39 – transmitting node 17a detects congestion condition in the
transit trunk and report congestion status to terminal 11a)*, wherein the first path is a
non-real time connection with a Minimum Cell Rate (R_{MCR}) and Peak Cell Rate (PCR) of
R_{PCR}* (Shirai: see Figure 19 and "(b) CIR value variable...terminal trunk 12 can be
effectively used" in column 21, line 31 through column 22, line 48; see also "The CIR
(Committed Information Rate)...guarantees at its normal time" in column 14, lines 7 –
9)*;*

*ascertain whether M alternative paths exist with available resources able to
satisfy the R_{PCR} for transferring traffic between the source node and the destination
node, wherein M is equal to or greater than 1* (Shirai: see Figure 6 and "(d) Alternate
transfer process to backup...detoured to the backup transit trunk 14" in column 15, line

46 through column 16, line 31; see also Figure 14 and "(f2) Second mode in which stepwise alternate…via the backup transit trunk 14b" in column 19, line 46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer process…to the backup transit trunk 14" in column 24, line 3 through column 25, line 15)*; and*

select one of the M alternative paths to reroute tile traffic between the source node and the destination node if tile M alternative paths exist, the selected one of them alternative paths replacing the first path (Shirai: see Figure 6 and "(d) Alternate transfer process to backup…detoured to the backup transit trunk 14" in column 15, line 46 through column 16, line 31; see also Figure 14 and "(f2) Second mode in which stepwise alternate…via the backup transit trunk 14b" in column 19, line 46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer process…to the backup transit trunk 14" in column 24, line 3 through column 25, line 15).

However, Shirai does not explicitly disclose the feature comprising:

the selected one of the M alternative paths replacing the first path for a remainder of the communication session.

Hu discloses the use of dynamic adaptation to release congestion in a connection-oriented network comprising the feature:

the selected one of the M alternative paths replacing the first path for a remainder of the communication session (Hu: see Figure 5 and "While the adaptation level…original path is discontinued" in page 3, sections 0031-0032).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shirai by using the features, as taught by Hu et al., in order to target misbehaved connections first so that network congestion may be efficiently alleviated without affecting other well-behaved connections (Hu: see page 1, section 0006).

Regarding claim 17, *a system* (Shirai: see Figure 3 and "The present invention relates...congestion occurrence time" in Abstract), *comprising*:

means for determining <u>that there is an indication </u>of traffic congestion in a first path connecting a source node and a destination node <u>for a communication session</u> (Shirai: see Figure 22 and "(i) Process in which...when a frame discard is detected" in column 22, line 49 through column 23, line 39 – transmitting node 17a detects congestion condition in the transit trunk and report congestion status to terminal 11a), *wherein the first path is a non-real time connection with <u>an available cell rate of</u>* R_{ACR} (Shirai: see Figure 19 and "(b) CIR value variable...terminal trunk 12 can be effectively used" in column 21, line 31 through column 22, line 48; see also "The CIR (Committed Information Rate)...guarantees at its normal time" in column 14, lines 7 – 9);

means at the source node for ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} *for transferring traffic between the source*

node and the destination node, wherein M is equal to or greater than 1 (Shirai: see Figure 6 and "(d) Alternate transfer process to backup...detoured to the backup transit trunk 14" in column 15, line 46 through column 16, line 31; see also Figure 14 and "(f2) Second mode in which stepwise alternate...via the backup transit trunk 14b" in column 19, line 46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer process...to the backup transit trunk 14" in column 24, line 3 through column 25, line 15); and

means at the source node for selecting one of the M alternative paths to reroute the traffic between the source node and the destination node if the M alternative paths exist, the selected one alternative path replacing the first path (Shirai: see Figure 6 and "(d) Alternate transfer process to backup...detoured to the backup transit trunk 14" in column 15, line 46 through column 16, line 31; see also Figure 14 and "(f2) Second mode in which stepwise alternate...via the backup transit trunk 14b" in column 19, line 46 through column 20, line 8; see also Figures 27 and 28 and "(j) Alternate transfer process...to the backup transit trunk 14" in column 24, line 3 through column 25, line 15).

However, Shirai does not explicitly disclose the feature comprising:

the selected one of the M alternative paths replacing the first path for a remainder of the communication session.

Hu discloses the use of dynamic adaptation to release congestion in a connection-oriented network comprising the feature:

the selected one of the M alternative paths replacing the first path for a remainder of the communication session (Hu: see Figure 5 and "While the adaptation level...original path is discontinued" in page 3, sections 0031-0032).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shirai by using the features, as taught by Hu et al., in order to target misbehaved connections first so that network congestion may be efficiently alleviated without affecting other well-behaved connections (Hu: see page 1, section 0006).

Regarding claim 19, *comprising receiving a notification of traffic congestion at the source node* (Shirai: see Figure 22 and "(i) Process in which...when a frame discard is detected" in column 22, line 49 through column 23, line 39 – transmitting node 17a detects congestion condition in the transit trunk and report congestion status to terminal 11a).

Regarding claim 20, *wherein the computer executable instructions comprise instructions that cause the one or more processors to receive a notification of traffic congestion at tile source node* (Shirai: see Figure 22 and "(i) Process in which...when a frame discard is detected" in column 22, line 49 through column 23, line 39 – transmitting node 17a detects congestion condition in the transit trunk and report congestion status to terminal 11a).

Regarding claim 22, *wherein the source node is configured to receive a notification of traffic congestion* (Shirai: see Figure 22 and "(i) Process in which...when a frame discard is detected" in column 22, line 49 through column 23, line 39 – transmitting node 17a detects congestion condition in the transit trunk and report congestion status to terminal 11a).

3.   Claims 7 – 9, and 11 – 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirai et al. (5,912,877) in view of Hu et al. (US 2003/0016808 A1) and further in view of Rabie et al. (US 2005/0160171 A1).

Rabie discloses a method for bandwidth management in data communication system comprising the following features:

Regarding claim 7, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths which best satisfies the R_{ACR} in accordance with one or more rules, if there are more than one of the M alternative paths* (Rabie: see "Steps in the selection...selection policy" in page 5, column 0060 and "According to the Best...is selected" in page 5, section 0064).

Regarding claim 8, *wherein selecting one of the M alternative paths to reroute the traffic, comprises selecting one of the M alternative paths with a maximum amount of unreserved resources to satisfy tile R_{ACR}, if there is more than one of the M alternative paths* (Rabie: see "Steps in the selection...selection policy" in page 5, column 0060 and "According to the Maximum Unreserved...is selected" in page 5, section 0062).

Regarding claim 9, *wherein selecting one of the M alternative paths to reroute tile traffic, comprises selecting one of tile M alternative paths with a least amount of unreserved resources but enough unreserved resources to support the R_{ACR}, if there is more than one of the M alternative paths* (Rabie: see "Steps in the selection...selection policy" in page 5, column 0060 and "According to the Mixing Long...is selected" in page 6, section 0067).

Regarding claim 11, *wherein selecting one of the M alternative paths to reroute tile traffic, comprises selecting one of the M alternative paths that satisfies tile R_{ACR} according to one or more custom criteria, if there is more than one of the M alternative paths* (Rabie: see "Steps in the selection…selection policy" in page 5, column 0060 and "According to the Least Number…is selected" in page 6, section 0066).

Regarding claim 12, *wherein selecting one of the M alternative paths to reroute tile traffic, comprises selecting one of the M alternative paths that satisfies the R_{ACR} according to one or more fuzzy rules, if there is more than one of the M alternative paths* (Rabie: see "Steps in the selection…selection policy" in page 5, column 0060 and "According to the Median Unreserved…is selected" in page 6, section 0072).

It would have been obvious to one of the ordinary skill in the art at the time of the invention to modify the system of Shirai with Hu by using the features, as taught by Rabie et al., in order to obtain benefits of more than one admission policy (Rabie: see "multiple admission…policy" in page 7, section 0080).

Allowable Subject Matter

4.   Claims 16 and 21 are allowed.

5.   Claim 18 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6.   The following is a statement of reasons for the indication of allowable subject matter:

Regarding claim 16, *a method for performing congestion control in a node in a connection-oriented packet-switching network, the method comprising:*

determining <u>that there is an indication </u>of traffic congestion in a first path connecting a source node and a destination node <u>for a communication session</u>, wherein the first path is a non-real time connection with an <u>available cell rate of </u>R_{ACR};

the <u>source</u> node ascertaining whether M alternative paths exist with available resources able to satisfy the R_{ACR} for transferring traffic between the source node and the destination node, wherein M is equal to or greater than 1;

the node selecting one of the M alternative paths to reroute the traffic between the source node and the destination node if the M alternative paths exist;

the *source* node ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate of R'_{ACR}, if M alternative paths do not exist, wherein R'_{ACR} is less than the R_{ACR}, but is greater than a new available <u>cell rate</u> for the first path if rate control were <u>instituted</u> to eliminate the traffic congestion; and

the source node selecting one of the X alternative paths to reroute the traffic between the source node and the destination node if the X alternative paths exist, <u>the selected</u> alternative <u>path replacing the first path for a remainder of the communication session.</u>

The prior arts do not explicitly disclose the features comprising:

the *source* node ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate of R'_{ACR}, if M alternative paths do not exist, wherein R'_{ACR} is less than the R_{ACR}, but is greater than a new available <u>cell rate</u> for the first path if rate control were <u>instituted</u> to eliminate the traffic congestion; and

the source node selecting one of the X alternative paths to reroute the traffic between the source node and the destination node if the X alternative paths exist, <u>the selected</u> alternative <u>path replacing the first path for a remainder of the communication session.</u>

Regarding claim 21, claim 21 is allowed because it is dependent on claim 16.

Regarding claim 18, *further comprising*

means for ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate of R'$_{ACR}$, if M alternative paths do not exist, wherein R'$_{ACR}$ is less than the R$_{ACR}$, but is greater than a new available <u>cell rate</u> for the first path if rate control were <u>instituted</u> to eliminate the traffic congestion; and

means for selecting one of the X alternative paths to reroute the traffic between the source node and the destination node if the X alternative paths exist.

The prior arts do not explicitly disclose the features comprising:

means for ascertaining whether X alternative paths exist with available resources able to satisfy a reduced Available Cell Rate of R'$_{ACR}$, if M alternative paths do not exist, wherein R'$_{ACR}$ is less than the R$_{ACR}$, but is greater than a new available <u>cell rate</u> for the first path if rate control were <u>instituted</u> to eliminate the traffic congestion; and

means for selecting one of the X alternative paths to reroute the traffic between the source node and the destination node if the X alternative paths exist.

Response to Arguments

7.   Applicant's arguments filed on May 12, 2009 have been fully considered but they are not persuasive.

The applicant argued, as in pages 1 and 2 in the RESPONSE, that "the Shirai, et al. reference keeps the standard transit line 3 in use even though some data is detoured to a backup transit line 4. See, for example, column 7, line 42; column 8, lines 23, 31-34, 45-52, 59-60; and column 10, lines 20-27. As explained at those portions of the Shirai, et al. reference and in column 12, lines 40-48, the intended operation of the Shirai, et al. arrangement is to relieve congestion on the standard transit line 3 quickly so that communications are guaranteed along that transit line. The Shirai, et al. reference accomplishes that by keeping the standard transit line in use even though some data may be transferred on the backup transit line."

In response, the Examiner respectfully disagrees with the argument above. Shirai, et al. discloses a data exchange and a data exchanging method for congestion control for a communication system. The data exchange includes a congestion status detecting unit for monitoring congestion level on a standard transit trunk (primary or first path) and a transit trunk control unit, if congestion occurs, for transferring/detouring data from the standard transit trunk to a backup transit trunk (Shirai: see Abstract; see also Figure 8, steps A1 – A6 and column 16, lines 40 - 65).

Conclusion

8.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE

MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not

mailed until after the end of the THREE-MONTH shortened statutory period, then the

shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later

than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to JUVENA LOO whose telephone number is (571)270-

1974. The examiner can normally be reached on Monday - Friday: 7:30am-4:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Kwang Yao can be reached on (571) 272-3182. The fax phone number for

the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hanh Nguyen/   /JUVENA LOO/
Primary Examiner, Art Unit 2416   Examiner
                                                       Art Unit 2416
                                                       September 25, 2009